

Evaluation of the changes in plasma concentrations of few free amino acids in ischemic and non-ischemic stroke patients

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Background and Aims: This study was performed to investigate the ability of some free plasma amino acids to be considered as nonspecific biomarkers for stroke.

Methods: Sixty patients, suffered from both types of stroke (30 ischemic and 30 hemorrhagic), and thirty healthy volunteers were recruited to the study. Plasma taurine, glutamic acid and glycine concentrations were determined utilizing a previously developed HPLC method with fluorescent detection. One-way ANOVA was carried out to analyze the data.

Results: Concentrations of glutamate and glycine in plasma were higher in patients with ischemic stroke than in those with hemorrhagic stroke and control group but the data were not statistically significant. There are significant differences in plasma taurine concentrations in both stroke groups rather than control ones ($p < 0.0001$). Interestingly ischemic stroke patients were found to have plasma taurine concentrations (16 mg/L) significantly higher than the hemorrhagic population (10.5 mg/L).

Conclusions: According to our study, plasma concentration of taurine could be introduced as a biomarker of stroke at least in the first five days of the illness. However it needs further studies with larger numbers of patients during a longer period.

Keywords: Stroke; Taurine, Glycine; Glutamic acid; HPLC